

**REMARKS**

Consideration of the following remarks and reconsideration and withdrawal of the rejections contained in the Office Action dated January 31, 2007 are earnestly solicited.

The present invention relates to the preparation of cellulose ethers from high bulk density raw cotton linters. These short fiber length materials have unexpectedly high bulk density. Such materials provide a unique composition that are especially well suited for the commercial manufacture of premium quality cellulose derivatives by using either slurry or high solids processes thereby resulting in an increased utilization of plant assets without additional investment.

Additionally, the present invention eliminates costly purification of raw cotton linters. An additional surprising benefit of the present invention is that it can provide unique composition comprised of high molecular weight cellulose materials suitable as feedstock for the production of cellulose derivatives.

In paragraphs 2 and 3 of the Office Action, claims that are readable upon the elected cellulosic species, carboxymethylcellulose and those that are considered not being readable upon the elected species are discussed. Applicants wish to bring to the Examiner's attention the fact that the bases, amines and quaternary ammonium hydroxides and mixtures thereof listed in claim 47 are readable upon the elected species. The listed bases may be properly considered to be adjuvants in the production of the elected cellulose species. As such, Applicants have not withdrawn claim 47 but continue to list the claim as "Original".

**Claim Rejections – 35 USC § 112, second paragraph**

In the Office Action, claims 63-65 were rejected under 35 USC § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. The Office Action states that, "[C]laims 63-65 disclose that the final product contains some fraction of the cellulose ether derivative. This limitation in Claims 63-65 lacks clear antecedent basis...since Claim 41 does not disclose a process for making an ether derivative and some other ingredient or a composition containing the (sic.) an ether derivative and some other component, which renders Claims 63-65 Indefinite."

Applicants have amended claims 41, 63-65 to clearly recite the cellulose ether derivative product as well as the cellulose ether derivative. In particular, claim 41 has been amended to clarify that the product of the process claimed is a cellulose ether derivative product containing a cellulose ether derivative. Claims 63-65, which are dependent upon

claim 41, had previously recited a "final" product. The term "final" has been replaced with the term "cellulose ether derivative". Applicants respectfully submit that the amendments to claims 63-65 as well as 41 have removed the basis for the 35 USC § 112, second paragraph rejection of claims 63-65. Applicants respectfully submit that claims 63-65 are now in good and proper order and respectfully request withdrawal of rejection of claims 63-65 as allowance of these claims.

#### **Claim Rejections – 35 USC § 102**

In the Office Action, claims 41-46, 48, 49, 51, 56, 57, 63-66 and 94-96 were rejected under 35 USC § 102(b) as being anticipated by Henry et al. (US Patent No. 3,085,087).

Applicants respectfully assert that the rejection of claims 41-46, 48, 49, 51, 56, 57, 63-66 and 94-96 under 35 USC § 102(b) as being anticipated by Henry et al is traversed, for the reason that Henry et al. fails to disclose or teach all of the elements of Applicants' invention, as claimed.

US Patent No. 3,085,087 to Henry et al. ("Henry"), is directed "...to an improved process or preparing carboxyalkyl cellulose ethers, and, more particularly, to such a process wherein an improved liquid medium is employed to give uniform and efficient etherification of cellulose and, consequently, alkali-soluble and water-soluble cellulose ethers of improved quality." (Column 1, lines 10-15).

In the rejection of claims 41-46, 48, 49, 51, 56, 57, 63-66 and 94-96 presented in the Office Action, the process of Henry found in Example 1 is cited as teaching "...a process for preparing carboxymethylcellulose that involve sodium hydroxide in water, a diluent, comminuted cellulose, monochloroacetic acid being combine (sic.) to form a slurry to produce the cellulose product." The Office Action recites various passages within Henry which allegedly anticipate Applicants' claims.

Applicants respectfully traverse the rejection of claims 41-46, 48, 49, 51, 56, 57, 63-66 and 94-96 as being anticipated by Henry, since Henry never discloses or teaches the preparation of cellulose ethers from high bulk density raw cotton linters, as claimed by Applicants. Henry is directed to an improved liquid medium for use in the production of cellulose ethers. The passages recited by the Office Action are directed to Henry's liquid medium as well as the disclosure of various reactants used in the production of cellulose ethers. However, when Henry discusses the types of cellulose used in producing cellulose ethers, the cellulose is described as "...chemically purified cotton linters, wood pulp and various other cellulosic materials are satisfactory of use in the process...the preferred ones

are purified cotton linters and  $\alpha$ -cellulose wood pulp." (Column 6, lines 17-20.). Henry makes no mention of the use of raw cotton linters in general or the raw cotton linter fibers that a bulk density of at least 8 g/100 ml in particular, as taught and claimed by Applicants. As such, Henry fails to anticipate 41-46, 48, 49, 51, 56, 57, 63-66 and 94-96.

In view of the above, Applicants respectfully submit that the rejection of claims 41-46, 48, 49, 51, 56, 57, 63-66 and 94-96 under 35 USC § 102(b) as being anticipated by Henry et al has been traversed, and Applicants respectfully request withdrawal of this rejection and allowance of the claims.

#### Claim Rejections – 35 USC § 103

In the Office Action, claims 58-62 were rejected under 35 USC § 103(a) as being unpatentable over by Henry et al.(US Patent No. 3,085,087) as applied to Claims 41-46, 48, 49, 51, 56, 57, 66 and 94-96, and further in view of Newbury et al. (US Patent No. 6,069,355).

The Office Action states that Applicants' "...claimed process for making an ether derivative differs from the Henry et al patent by claiming a process that involve (sic.) the viscosity of the starting material or cellulose ether derivative being reduced by chemical, mechanical, irradiation or enzymatic means." The Office Action additionally states that "[T]he Newbury et al patent shows that the viscosity of cellulose raw material being reduce (sic.) by irradiation, chemical treatment or enzymatic treatment is known in the art (see column 2, last line to column 3, line 4)."

Applicants respectfully assert that the rejection of claim 58-62 as being unpatentable over Henry in view of Newbury et al. is traversed for the reason that the combination of Henry with Newbury et al. would not be obvious to a person of ordinary skill in the art. Additionally, even if such a combination of Henry and Newbury et al. were to be made, the combination would not result in Applicants' invention, as claimed.

As previously stated by Applicants in their traversal the rejection of claims 41-46, 48, 49, 51, 56, 57, 63-66 and 94-96 as being anticipated by Henry, Henry never discloses or teaches the preparation of cellulose ethers from high bulk density raw cotton linters, as claimed by Applicants. In order for claims 58-62 to be unpatentable over Henry in view of Newbury et al., the combination of Henry with Newbury et al. must make the instant invention obvious to a person of ordinary skill in the art. Applicants respectfully assert that the teachings of Newbury et al. do not provide those elements of the Applicants' invention, as claimed, which are missing from Henry. Newbury et al. never discloses, teaches or suggests the use or benefits of high bulk density raw cotton linters in its process.

US Patent No. 6,093,355 to Newbury et al. (Newbury), is directed "...to methods for the manufacture of extruded lyocell articles such as fibres and films, wherein a solution of

cellulose in an aqueous tertiary amine N-oxide solvent is extruded through a die into a coagulating bath. Lyocell is the generic name for cellulose produced by solvent extrusion or solvent-spinning processes of this kind." (Column 1, lines 4-7.) The cellulose of the Newbury process first dissolved to form a solution. This cellulose solution is subsequently extruded into a desired shape, coagulated washed and dried. This is a very different process from the process of a producing cellulose ether derivative, as claimed by Applicants.

In particular, Newbury teaches the cellulose of use as a raw material in its process as "[C]onventional dissolving-grade cellulose, for example in the form of woodpulp and cotton linters" (Column 1, lines 20-22.) Additionally, Newbury teaches in relation to its Test Method 1, that "Test Method 1 is applicable to sources of cellulose such as dissolving pulp, cotton linters and regenerated or reconstituted cellulose articles such as fibre and films (preferably free from extraneous chemicals such as dyes and finishes)." (Column 4, lines 17-20.) It is clear from the above-cited passages, that the cellulose of use in Newbury should be a dissolving-grade cellulose in the form of wood pulp, cotton linters or previously produced cellulose articles which have been regenerated or reconstituted and which are preferably free from extraneous chemicals. These cellulose raw materials must therefore be relatively pure in nature, in order to be "dissolving-grade" and which are preferably free from extraneous chemicals. Raw cotton linters would not be considered to be "dissolving grade" material.

Applicants respectfully submit that Newbury contains no teaching or suggestion to the person of ordinary skill in the art to substitute the high bulk density raw cotton linters as disclosed by Applicants for the dissolving-grade cellulose raw materials taught as useful in its process. In fact, Applicants respectfully submit that the teachings of Newbury actually teach away from the use of high bulk density raw cotton linters, since raw cotton linters would necessarily contain extraneous chemicals as they have not been subjected to isolation and purification steps needed to produce cotton linters.

Additionally, Applicants respectfully submit that it would not be obvious to a person of ordinary skill in the art of producing cellulose ether derivative products in view of the teachings of Newbury that processes used to reduce the viscosity of a starting cellulose solution would necessarily be useful in reducing the intrinsic viscosity of the resultant cellulose ether derivative product produced in Applicants claimed process.

Applicants respectfully assert that the rejection of claims 58-62 under 35 USC § 103(a) as being unpatentable over Henry in view of Newbury has been traversed for the reasons as set forth above. Applicants respectfully request withdrawal of the rejection of claims 58-62 under 35 U.S.C. §103(a) and request the allowance of these claims.

**Amendment to Claims**

Applicants have amended claims, 63-65 to clearly recite the cellulose ether derivative product.

Applicants have amended claim 41 to recite the composition of claim 1 so to complete the claim.

Applicants have amended claims 45, 56, 57 and 58 so to clearly recite the cellulose ether derivative product.


Applicants have amended claims 51 and 66 to clearly recite the cellulose ether derivative.

**CONCLUSION**

In view of the reasons set forth above, Applicants respectfully request withdrawal of the above-mentioned rejections of record, and the allowance of all pending claims, and the holding of this application in condition for allowance. If any points remain of issue that may best be resolved through a personal or telephonic interview, the Examiner is respectfully requested to contact the undersigned at the below-listed telephone number.

Except as otherwise stated in the above-noted remarks, Applicants notes that each of the amendments have been made to place the claims in better form for U.S. practice, not to distinguish the claims from prior art references, otherwise narrow the scope of the previously pending claims or comply with the other statutory requirements.

Respectfully submitted,



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